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EXAMINER

WONG, WARNER

ART UNIT

PAPER NUMBER

2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/026,539

Applicant(s)

CHOI, SANG JUN

Examiner

Warner Wong

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,8-16 and 18-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8-16 and 18-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1 and 6 are objected to because of the following informalities: in each claim, the limitations "that restores" and "that generates" following the appended limitations should be grammatically corrected as "restores" and "generates" respectively. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-6, 8-13, 15-16, 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peterson.

Regarding claims 1 and 11, Petersen describes a network for transmitting asynchronous transfer mode (ATM) adaptation layer-2 (AAL2) type ATM cells (AAL2 cells), comprising:

an AAL2 transmitter (fig. 7A, Tx/Rx #42-35) that generates AAL cells (i.e. fig. 7A, AAL2' cells (AAL cells) from Tx/Rx #42-35 (AAL2 transmitter) towards the BSC) by multiplexing N AAL packets, comprising (generated by adding) an AAL packet header to every (ith) data subset of an original user data set (fig. 6B, each AAL2' cell has a header 122 & a combined (multiplexed) set of AAL2 packets [ith user data subset]

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received from a mobile user 48), the AAL transmitter residing in a channel card (fig. 7, Tx/Rx card 42-35 (channel card) transmits AAL2' (AAL) cells), the channel card further comprising an AAL receiver and a CPU(fig. 5 & 7, Tx/Rx card 42-35 (channel card) receives AAL2' (AAL) cells and has a controller 42-33);

an AAL receiver (fig. 7A, CHU #42-32) that receive one or more AAL cells (comprising user data) generated by the AAL transmitter and restores the original user data set by demultiplexing the N AAL packets included in the one or more AAL cells (col. 11, lines 23-26, where CHU terminates AAL2 link and fig. 11, ATM demultiplexing #260 & AAL2' mapping 262).

an AAL2 transmitter (fig. 7A, CHU #42-32) that receives the restored original user data set from the AAL receiver and generates AAL2 cells (col. 3, lines 21-25 and fig. 11, where AAL2 is sent to FIFO #252) by multiplexing M common part sublayer (CPS) packets (fig. 3), which comprises (generated by adding) a CPS packet header to a jth data subset of the restored original user data set (payload) (fig. 3, AAL2 CPS packet comprising CPS-packet header and payload).

Peterson describes an AAL2 processor (fig. 11, CHU board processor 200) which processes the reception of AAL2' (AAL) cells incoming from the Tx/Rx cards and the transmission of AAL2 cells outgoing towards the RNC/BSC), but fails to explicitly describe:

the AAL receiver residing in an AAL2 processor, and the AAL2 transmitter residing in the AAL2 processor.

However, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to describe that the AAL receiver and the AAL2 transmitter to be inside the AAL2 processor/controller instead of outside the processor/controller which processes such transmission. It is held that there would be no invention in shifting the parts representing the AAL2 receiver and AAL transmitter to a position immediately inside the AAL2 processor since the operation of the device would not thereby be modified (In re Japikse, 86 USPQ 70 (CCPA 1950)).

Regarding claims 2 and 12, Petersen describes all limitations set forth in claims 1 and 11 respectively. Petersen further describes: the AAL packet header includes a sequence number of the *i*th data subset (fig. 3A, where SN = sequence number of the AAL2 data).

Regarding claims 3 and 13, Petersen describes all limitations set forth in claims 2 and 12 respectively. Petersen further describes: the AAL packet header further includes a routing tag field that identifies the original user data set and a length indicator field (LI) that indicates the length of the *i*th data subset (fig. 2, Channel ID CID and LI are the routing tag field and the Length Indicator respectively of the AAL2 data).

Regarding claims 5 and 15, Petersen describes all limitations set forth in claims 1 and 11 respectively. Petersen further describes: each of AAL cell includes an ATM header and a Start of Packet field, which indicates a starting location of an *i*th AAL packet. (fig. 3A, a header where the start field resides, "The start field 24, shown in FIG. 3A, facilitates one AAL2 packet bridging two ATM cells.", col. 2, 27-28).

Regarding claims 6 and 16, Petersen describes a network for receiving asynchronous transfer mode (ATM) adaptation layer-2 (AAL2) type ATM cells (AAL2 cells), comprising:

an AAL2 receiver (fig. 7A, CHU #42-32) that receives AAL2 cells (col. 11, lines 24-26 and fig. 7A, where CHU terminates the AAL2 ATM-VCC coming from the BSC), containing common part sublayer (CPS) packets corresponding to an original user data set (fig. 2, where cells contained AAL2-CPS packets), and restores the original user data set by demultiplexing the CPS packets (col. 3, lines 17-21, fig. 11 #260 & #268, fig. 13B, #13B-13 and fig. 13F, #13F-12);

an AAL transmitter (fig. 7A, CHU #42-32) that receives the restored original user data set from the AAL2 receiver and generates AAL cells (fig. 13F, #13F-16 generating AAL2' cells to Tx/Rx cards 42-35) by multiplexing N AAL packets (fig. 4, where ATM_H header is added/multiplexed with the AAL2 packet #26[4-1] and padding to become an AAL2' cell), generated by adding an AAL packet header to an ith data subset of the restored original user data set, wherein i and N are positive integers and $1 < i < N$ (fig. 4, where AAL packet header is AAL2_H and ith data subset is AAL2 payload);

an AAL receiver that receives the one or more AAL cells from the AAL transmitter and restores the original user data set by demultiplexing the N AAL packets (fig. 5, Tx/Rx card 42-35 receives AAL2' cells (fig. 6B) from RNC and inherently disseminates (demultiplexes) each AAL packet in order to

forward the packet to the correct mobile user according to the channel ID in the packet header, col. 2, lines 8-10, col. 8, lines 21-22 & 30-33), the AAL receiver residing in a selector (fig. 7, Tx/Rx card 42-35 (selector) receives AAL2' (AAL) cells), the selector further comprising a second AAL transmitter and a CPU (fig. 5 & 7, Tx/Rx card 42-35 (selector) also transmits AAL2' (AAL) cells and a controller (CPU)).

Peterson describes an AAL2 processor (fig. 11, CHU board processor 200) which processes the reception of AAL2' (AAL) cells incoming from the Tx/Rx cards and the transmission of AAL2 cells outgoing towards the RNC/BSC), but fails to explicitly describe:

the AAL receiver residing in an AAL2 processor, and the AAL2 transmitter residing in the AAL2 processor.

However, it would have been obvious to one with ordinary skill in the art at the time of invention by applicant to describe that the AAL receiver and the AAL2 transmitter to be inside the AAL2 processor/controller instead of outside the processor/controller which processes such transmission. It is held that there would be no invention in shifting the parts representing the AAL2 receiver and AAL transmitter to a position immediately inside the AAL2 processor since the operation of the device would not thereby be modified (In re Japikse, 86 USPQ 70 (CCPA 1950)).

Regarding claims 8 and 18, Petersen describes all limitations set forth in claim 6 and 16. Petersen further describes: the AAL packet header includes a sequence

number of the i th data subset (fig. 3A, where SN = sequence number of the AAL2 data), a routing tag field identifying the original user data set (fig. 2, Channel ID CID is the routing tag field in respect to the AAL2 data) and a length indicator field indicating the length of the i th data subset (fig. 2, LI is the Length Indicator in respect to the AAL2 data).

Regarding claims 10 and 20, Petersen describes all limitations set forth in claims 6 and 16 respectively. Petersen further describes: each of AAL cell includes an ATM header and a Start of Packet field, which indicates a starting location of an i th AAL packet. (fig. 3A, a header where the start field resides, "The start field 24, shown in FIG. 3A, facilitates one AAL2 packet bridging two ATM cells.", col. 2, 27-28).

Regarding claim 21, Petersen describes all limitations set forth in claim 1. It is inherent that Petersen further describes: i , j , N , and M are positive integers, $1 < i < N$, and $1 < j < M$, where i and j are variables to the N segmented AAL packets and M segmented AAL2 packets.

3. Claims 4 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Petersen in view of Strawczynski (6,628,641).

Regarding claims 4 and 14, Petersen describes all limitations set forth in claims 3 and 13 respectively. Petersen lacks what Strawczynski describes: the AAL packet (cell) header further includes a C-FLAG field (PTI) that may indicate whether the payload (i th data subset) represents the last cell of the frame (N th data subset of the original user data set) (col. 7, lines 62-65).

It would have been obvious to one with ordinary skill in the art at the time of invention by applicant to specify that the PTI field may be used to indicate if the transmitted cell/packet is the last cell/packet for a frame of user data. The motivation being that should the receiver decides that the entire frame is irrecoverable during the transmission processes, the receiver may still detect and process the final cell containing important information (Strawczynski, col. 8, lines 2-10).

Response to Arguments

4. Applicant's arguments filed July 5, 2007 have been fully considered but they are not persuasive.

Many of the arguments, such as on p. 9 paragraph 3, last line of p. 10 paragraph 1, and on p. 11 first paragraph, is about that the Petersen's reference of multiplexing of channels into AAL2 prime protocol does not equate to "multiplexing AAL2 cells carrying AAL2 packets" and "does not multiplex CPS packets". The examiner noted that such arguments have been responded in the last Office Action and are not repeated here.

Also on p. 10 paragraph 1, the applicant argues that "the Office Action does not suggest specific relationships of the AAL transmitter, the AAL receiver and the AAL2 transmitter of the claim apparatus of independent claim 1 .. Rather, the cited sections related to a base station (BS) 42 and a BSC 44." The examiner respectfully disagrees.

The examiner noted that the applicant's overall invention as depicted in fig. 1 of the instant application is almost identical to that of Petersons (Peterson, fig. 7), where the AAL transmitter/receiver and AAL2 transmitter/receivers are at the BS and the BSC

in both the instant application and the Peterson reference. In comparing the 2 drawings:

(1) the applicant's AAL transmitter 111 and AAL receiver 112 directly corresponds to the Peterson's Tx/Rx component 42-35 which transmits and receives AAL2' cells as shown. (AAL cells corresponds to AAL2' cells).

(2) the AAL2 processor which receives AAL cells transmitted within the BS 100 repackages and retransmits the MS data via the E1 interface 121 as AAL2 to the BSC 200. In Peterson, it corresponds to the CHU 42-43 which receives AAL2 cells transmitted within the BS 42 repackages and retransmits the MS data via the ET terminal interface 42-34 as AAL2 to the BSC 44.

On p. 10 paragraphs 2-3, and similarly on p. 11 paragraphs 3-4 for claim 6, on p. 12 paragraphs 2-3 for claim 11 and on p.13 paragraphs 1-2 for claim 13, the applicant argues that the appended description is distinct from the Peterson reference. The examiner respectfully disagrees.

The examiner asserts that **each** of the additional limitations does not overcome the Peterson reference:

(1) It is obvious that an AAL receiver (located at the AAL2 processor 122 of the instant application, which corresponds to the AAL2' receiving component of Peterson's CHU 42-32) receives one or more AAL cells generated by the AAL transmitter (internal transmitter 111, which corresponds to Peterson Tx/Rx 42-35 transmitting the AAL2' cells.

(2) It is obvious that an AAL2 transmitter receives the restored original user data set from the AAL receiver. As per the Office Action, Peterson depicts in fig. 4 and 6A & 6B that once the receiving component (receiver) of BS CHU 42-32 (fig. 7) receives AAL2' cells, the CHU repackages users data from the AAL2' to AAL2 cells, which involves extracting (restoring) the (original) user data, and transmits the AAL2 (AAL2 transmitter).

Hence, the Peterson reference fulfills all of the amended claim limitations.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 6:30AM - 3:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang Yao can be reached on 571-272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Warner Wong
Examiner
Art Unit 2616

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KWANG BIN YAO
SUPERVISORY PATENT EXAMINER

A handwritten signature in black ink, appearing to read 'Kwong Bin Yao', written in a cursive style.